HYBRID AND WAR ACTIONS OF THE RUSSIAN FEDERATION AT SEA: LESSONS LEARNED, COOPERATIVE COUNTERING AND PROSPECTIVES

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Abstract: In the conditions of Russia's armed aggression against Ukraine, an important issue in science and practice is to determine the patterns of the aggressor's transition from hybrid to wartime actions and to determine lessons learned from conducting war at sea. Therefore, in this work is considered the hybrid and military actions of the Russian Federation at sea and main lessons learned, cooperative countering and prospects.

Keywords: Ukraine, Hybrid aggression, Russia, Education, Navy, Moskva missile cruiser

Navy and Hybrid Warfare

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The most actual questions in the context of Russia's hybrid and wartime actions the at sea are next:

1. Why did Russia transit to wartime actions in Ukraine and were its hybrid actions successful, in particular at sea?
2. How successful was the deterrence of Russia from the expansion of aggression at sea?
3. Is it objective to confirm that Russia was not able to succeed in implementing its own "strategy of limited actions", and its naval strategy was a failure?
4. How did the character of warfare on the Black Sea change from February 24 to April 15, 2022, and why did this happen?
5. What are the main conclusions and lessons from conducting warfare at sea and what determines the prospects for the development of the situation at sea and the directions of joint counteraction to the aggressor?

As we know, until February 24, 2022, Russia actively conducted hybrid actions in the Black sea region in 2014-2021, in particular:

1. Information actions regarding the distortion of information (distribution of fakes) about the activities at sea of the forces of the Naval Forces of the Armed Forces of Ukraine and NATO member states.
2. Taking measures through diplomatic channels to spread misinformation about the situation in Ukraine and pressure the leadership of other states with the aim of countering Ukraine at sea.
3. The employment of military formations without identification marks during the seizure of Crimea.
4. Implementation of large-scale illegal stops of civilian vessels.
5. Closure of large areas for navigation, which limit opportunities for international shipping and daily activities of ships of the Black Sea states.

6. Hindering the transfer of ships of the Naval Forces of the Armed Forces of Ukraine from the Black Sea to the Sea of Azov in gross violation of international maritime law.

7. Implementation of illegal radio-electronic influence and disruption of the functioning of communication and navigation means, including the global GPS navigation system ("spoofing").

8. The covert deployment of underwater surveillance assets beyond its own territorial sea and possibly on underwater pipelines.

9. Conducting permanent demonstration, provocative and reconnaissance actions in designated areas of the seas close to the strait zones, the territorial sea of Ukraine and other Black Sea states.

The analysis of the these actions made it possible to determine the following main conclusions and lessons from the experience of conducting hybrid actions in the black sea region in 2014-2021:

1. Using technologies of hybrid influence and violating international law, in 1991-2014 the russian federation destabilized the situation and seized large parts of the territories and water spaces of three states of the Black Sea region (Moldova, Georgia, Ukraine), created unrecognized quasi-state entities on their territory.

2. Actions carried out by the Russian Federation against the specified states led to large-scale violations of human rights and humanitarian disasters in the occupied (controlled) territories.

3. After seizing the water spaces of Ukraine and Georgia, the Russian Federation illegally uses the marine resources of the Black and Azov Seas and negatively affects the maritime economic activity of states, in particular Ukraine.

4. Hybrid actions at sea, in particular, delays of civilian ships and large-scale closure of areas for sailing, the russian federation negatively affects international shipping and maritime safety in general.

5. In order to stop large-scale violations of human rights in the territories of 3 states occupied by the Russian Federation, primarily in Crimea (Ukraine), restore the territorial integrity of states in accordance with the Helsinki Act of August 1, 1975, stop violations of international law and ensure international security, it is necessary to form and implement a joint security strategy in the Black Sea region.

Technology of Hybrid Warfare

As is known, the technology of hybrid war involves achieving the greatest effect by combining informational, economic, political and other actions with limited military operations. If the hybrid actions do not achieve the goal, then, as evidenced by the experience of the Russian-Ukrainian war, there is a transition to unlimited military actions. Now we can say that hybrid actions of the Russian Federation, named as the "strategy of limited actions", did not work: the Russia did not manage to restore control over Ukraine!

Thus, during the planning of actions in a crisis situation of a military nature, it is necessary to take into account the ratio of volumes (V) of hybrid and military actions and to bear in mind the presence of a "inflection" point (Tn), in which there is a transition from a hybrid to a military confrontation. This relationship between hybrid actions and military actions is presented in the figure 1 [11]:

Notes: V — scope of actions; T — time indicator of actions; T_n — the time (moment) of transition from hybrid to wartime actions.
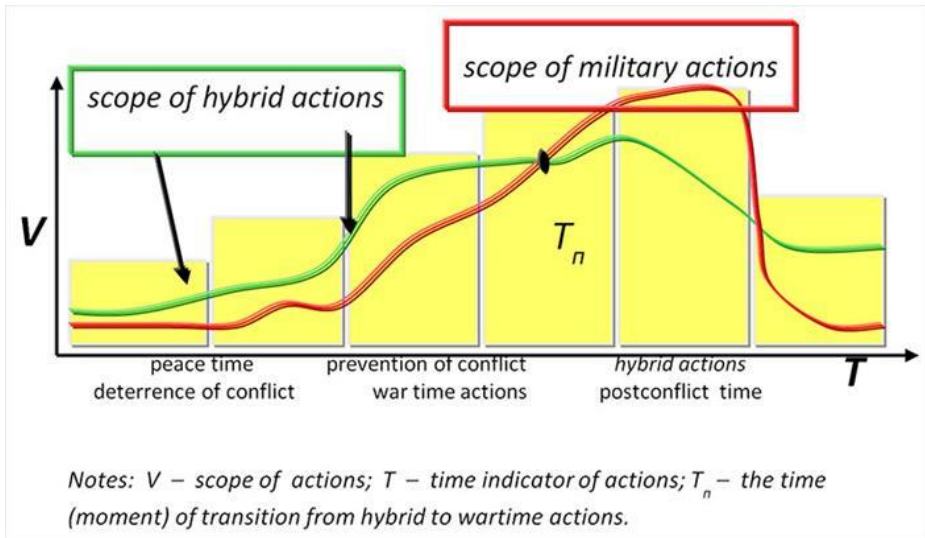
Figure 1: Scope of Hybrid and Military actions comparison

An important aspect is the awareness of the specifics of the transition from hybrid to military operations. In particular, on the part of one of the parties - blackmail and intimidation, on the part of the other party - restraint. In the conditions of the deployment of task forces by Russia in 2021 and at the beginning of 2022, deterrence actions, in particular at sea, could be an important means of influencing it. However, in the Black Sea, on the contrary, the activity of forces, in particular foreign navies, decreased. Not a single ship entered the Black Sea in January-February 2022.

At the same time, the closure of the Bosphorus by Turkey in accordance with the Montreux Convention made it possible to limit the number of Russian missile carriers in the Black Sea to 3 units - a frigate and two submarines (total missiles - up to 16) from the Black Sea Fleet, which remained in the Mediterranean Sea.

An analysis of the enemy's activities in the first days of military operations at sea proved that the enemy's purpose in the Black Sea was [12]:

1. Ensuring dominance in the northwestern part of the Black Sea;
2. Blocking the actions of a group of disparate forces and seaports of Ukraine in this area;
3. Restraining the troops (forces) of the anti-aircraft defense and preventing their overturning to strengthen the groups in the areas where the main efforts are concentrated;
4. Creation of favorable conditions for the amphibious operations.

The enemy's purpose in Sea of Azov was:

1. Assistance to the troops in the capture of Berdyansk and Mariupol;
2. Carrying out sea transportation on the interests of military operations on land.

Analysis of the balance of forces shows that as of February 24, the enemy had a complete and seemingly decisive advantage in the main forces: one to twelve. Quantitative ratio of forces and means of the parties (24.02.2022) is shown on figure 2.

Moreover, the enemy had complete dominance in the air, which is a critical condition for creating conditions for command at sea. Round-the-clock rotation in the air of at least two or more fighter-bombers at the border of Cape Tarkhankut - Snake Island ensured constant surveillance, quick detection, and destruction of surface targets.

To achieve the purpose at sea, Russia took the following combat actions from the beginning of the invasion:

1. Ensuring a constant presence in the northwestern part of the Black Sea, maneuvering ships in coastal areas, approaching certain areas of the coast, and provoking our forces to open fire.

2. Overturning by sea and the withdrawal of sabotage and reconnaissance groups to our coast.
3. Conducting reconnaissance by ships, manned air-craft, and UAVs in the sea and over the coast.
4. Demonstration actions of surface forces, including the partial deployment of naval strike groups and am-phibious forces, their maneuvering on the approaches to probable landing areas.
5. Carrying out selective strikes by ships and aircraft on military and civilian objects, including bridges, ports, control points, base points, civilian vessels and war-ships at sea.
6. "Caliber" missiles launches from the surface ships and submarines for the strikes on objects in the entire depth of the territory of Ukraine.

	Ukraine		russian federation
1. Surface forces :			
- warships	22	1 : 2	43
- total (ships)	38	1 : 1,5	51
2. Coastal missile and artillery troops:			
- launchers	?	?	8
3. Summary missile's volley:			
- sea-based cruise missiles	?	?	132
- only anti-ship cruise missiles	?	?	84

Figure 2: Military ratio: Russian Federation vs Ukraine (24.02.2022.)

Casualties in Russian fleet

Consider several combat episodes that characterize actions at sea. During actions related to the anti-landing defense of the coast, the diving vessel of the Ukrainian fleet "Pochaiv" with

only small arms on board was forced to engage in battle with the frigate from the fregat "Makarov". The frigate, chasing the ship, successively struck with artillery and anti-aircraft missiles. However, as a result of the joint coordinated actions of the anti-landing defense forces and the diving vessel, the frigate was expelled from the coastal waters under the blows of coastal artillery. This example demonstrates the effectiveness of the system of anti-landing actions and, in particular, the created mine-missile-artillery positions, which combined the influence of naval and engineering mines, artillery, anti-ship complexes, other forces and means. From that time on, the enemy became more cautious and did not approach too close to the coast.

One of the most influential factors in actions at sea has become maritime robotic systems, in particular, Turkish and Ukrainian unmanned aerial systems, other new types of weapons, and the Ukrainian coastal missile complex "Neptun". Timely detection and recognition of enemy surface ships at distances of up to several hundred kilometers and high-precision damage using a low-altitude trajectory and methods of protection against enemy EW ship systems determined combat success in operations at sea. Also, extremely important factors were: the fighting spirit of the personnel, their indomitability and efficiency; round-the-clock, practically scientific, analysis of enemy actions, acquired experience, situation and simulation of enemy actions; effective interspecies management system using modern information systems; the persistence of rocket sailors and representatives of manufacturing enterprises for the adjustment of weapons; the validity of the decisions and the demonstrated professional wisdom of the commanders in the implementation of a rational naval strategy built on asymmetric approaches in the fight against a multiple superior enemy.

It should be noted that the enemy also made his "contribution". It is likely that the unsatisfactory level of information about the real capabilities of the Ukrainian fleet did not allow

the enemy to correctly assess the situation and protect the ships from the attacks of drones and anti-ship missiles. For a long time, enemy ships maneuvered within the range of our weapons.

After the successful strike on the frigate Essen on April 2, and its refusal to fulfill its mission and hasty return to Sevastopol, the enemy limited the maneuvering areas of its ships no closer than 80 kilometers from the Ukrainian coast. Why did the enemy ships maneuver at such a distance in the future, and not at a distance safe from Neptune strikes? This question remained unanswered. However, this erroneous decision of the enemy led to even more negative results and combat losses for him.

The sinking of the "Moskva" missile cruiser

In this time the missile cruiser "Moskva" continued to maneuver in the area between the gas production platforms of the Odesa gas field and Zmiin Island since the beginning of the enemy's invasion of Ukraine. From the experience of the Russian-Georgian armed conflict in the Black Sea in 2008, it was known that the command post of the commander of the force group operating at sea and the forward element of the control post (ship control post) of the commander of the Black Sea Fleet are traditionally deployed on the cruiser. In addition, being close to the outer border of the "war risk area" declared by Russia on February 24, the cruiser could simultaneously perform tasks related to the isolation of this area.

Under such conditions, despite the priority of defeating landing ships with marine landing troops on board, it became logical to consider the issue of inflicting damage on the cruiser.
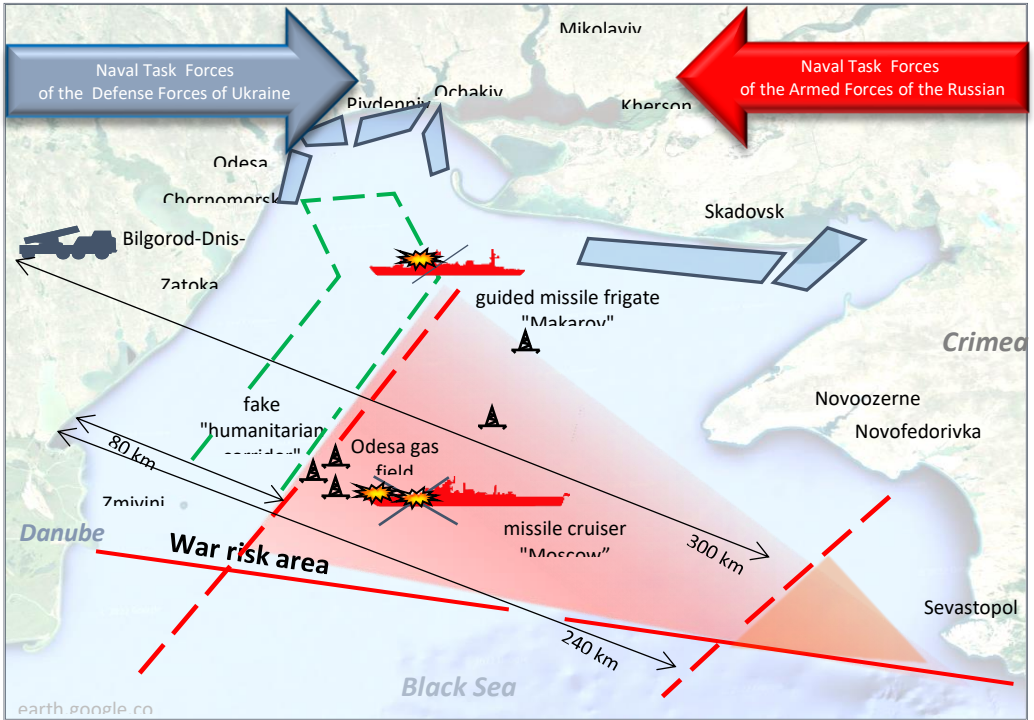
Figure 3: Missile cruiser "Moscow"

When determining the priority of targets, an important aspect was determining the level of the cruiser's ability to repel a missile strike, in particular:

1. the technical readiness of weapons and ship systems, including the ship's survivability combat system;
2. the degree of modernization of radar and anti-aircraft missile weapons, including the ability of complexes to timely detect and destroy air targets at extremely low altitudes;
3. the level of combat training of the crew, including the professional skills of young conscripts, the presence of the crew in combat operations in Georgia, Syria, and training in the ship's combat calculations.

The analysis of this combination of factors and the importance of destroying the ship, which is the flagship of the fleet and has the name of the capital of the state, as an element of moral and psychological influence, determined the priority of this goal among all others.

The first attempt to strike the cruiser on April 4, 2022 was unsuccessful due to it occupying a favorable position behind the gas production platforms. However, this experience and analysis of the cruiser's maneuvering was used to create a favorable environment and launch a successful missile attack on it on April 13, 2022, which caused a fire, an ammunition explosion, and sank the cruiser within a day, despite the actions of other rlief ships.

Consequences

The destruction of the cruiser "Moskva" led to a number of significant consequences that decisively affected the change in the situation at sea, in particular:

Tactical consequences:

1. the destruction of the cruiser required its replacement with another warship to perform the tasks of isolating the area, covering the garrison of Zmiiny Island, and ensuring the control of forces at sea;
2. a significant reduction in the overall combat capabilities of the enemy forces operating at sea; negative impact on the morale and psychological state of the crews of warships and other forces of the group that performed tasks in the area of hostilities;

Operational consequences:

3. the emergence of the need to make changes in the distribution of tasks by forces in operations, in the operational construction and management organization of enemy forces at sea;

4. shifting the areas of action of the forces to the east, in fact to the coastal areas of Crimea, primarily with the aim of securing ships of the main classes from entering the zone of damage of the Neptune missile complex;

Strategic consequences:

5. the enemy's refusal to use most of the area of military operations and, in fact, the disruption of the enemy's dominance at sea;
6. a significant decrease in the probability of a sea landing and, accordingly, a threat to Ukraine regarding the emergence of a new dangerous strategic direction in the war; a significant negative impact on the moral and psychological state of the population and the military and political leadership of Russia

The main losses of enemy ships in combat actions at Black and Azov seas (march - june 2022) are:

1. destroyed missile cruiser of project 1164 "Moskva", the flagship of the fleet (April 13-14, 2022, Black Sea, displacement - 11,280 tons);
2. destroyed large amphibious ship of project 1171 "Saratov"
   (March 24, 2022, Sea of Azov, displacement - 4,650 tons);
3. destroyed support vessel project 22870 "V. Beh" with air defense systems and other weapons (June 17, 2022, Black Sea, displacement - 1,670 tons);
4. destroyed 5 combat boats with weapons and assault units
   (May 2-7, 2022, Black Sea, total displacement - 200 tons);
5. disabled frigate project 11356R "Essen" (for 10 days) (04/02/2022, Black Sea);
6. damaged large landing ship "Novocherkassk" (24.03.2022, Sea of Azov);

7. damaged large landing ship "Ts. Kunikov" (March 24, 2022, Sea of Azov).

An important aspect of actions at sea was the agreements on the export of grain from three Ukrainian ports - Odesa, Chornomorsk, Pivdenny. More than 3 million tons of agricultural products were exported in July - September. But in fact, this agreement became another case of hybrid actions of the Russian Federation, which in this way resolved the issue of strengthening its authority among poor African countries and increasing its own currency revenues, that is, financing the war, thanks to the export of stolen grain and fertilizers by sea. Combat actions at Black Sea in 2022 were reviewed by following authors [13–15]

Lessons Identified and Lesson Learned

The conducted analysis made it possible to draw the following the main conclusions and lessons from the experience of war at sea include:

1. The successful conduct of military operations by the Ukrainian Naval Task Forces in the northwestern part of the Black Sea disrupted the enemy's dominance at sea and limited the areas of combat maneuvering of his strike forces to the lines of the coastal waters around Crimea.
2. Thanks to the effective organization of the defense of the seacoast, in particular with the creation and use of mine-missile-artillery positions (with a combination of sea mine barriers, MLRS strikes, coastal artillery fire, engineering barriers), as well as due to the disruption of the enemy's offensive in the Mykolaiv direction and the domination of the sea, a naval amphibious operation and a sharp change in the strategic situation in the war were not allowed.

3. The incomplete creation (at the beginning of the military invasion) of the Naval Task Forces for conducting combat operations in the Azov Sea, the absence of a military command body of the Navy to manage this group, as well as general problematic issues of preparing and conducting the defense of the Azov coast, did not allow the completion of the tasks related to the defense of the state from a given sea direction in this zone.

4. The lack of long-range weapons in own forces (troops) does not allow to pre-emptively destroy the enemy's sea-based cruise missile carriers and significantly reduce its negative impact on the general military-strategic and operational situation, avoid damage to important military, defense-industrial, energy, infrastructure, and other objects to the entire depth of the territory of the state and victims among the civilian population.

The prospects for actions at sea are determined, first of all, by the following factors:

1. Lack of sufficient capabilities to neutralize enemy ships and submarines armed with long-range sea-based cruise missiles.

2. The nature and results of actions on land, in particular in Crimea, and restoration of access to the Sea of Azov.

3. The constant need to provide forces with weapons and other material means to improve the balance of forces at sea.

4. Volumes and forms of international security and defense cooperation, an understanding of the need to transition to international or coalition naval operations to compel Russia to peace and restore the territorial integrity of Ukraine and other states.

Conclusion

Practical measures of cooperative countering activities against the Kremlin in modern conditions are the provision to Ukraine of small-sized high-speed surface platforms with long-range and medium-range missiles on board, other sea platforms to replace the lost ones, as well as unmanned aircraft and underwater reconnaissance-strike complexes, the latest means of communication and complexes automation of force management, provision of intelligence information in real time.

It is important to say fot all: we, Ukrainians, are already in the fight, we have already done the impossible, like the destruction of the cruiser "Moscow", and we will fight in any conditions until the final liberation of our land.

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